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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/522,185	03/09/2000	Henry Li	17425US01	2282

23446 7590 01/23/2008

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EXAMINER	
MOORE, IAN N	

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
01/23/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/522,185	LI ET AL.	
	Examiner	Art Unit	
	Ian N. Moore	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-12,26,38-49,74,91 and 175-192* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *26,38-48,74,91,179-182,186 and 189* is/are allowed.

6)☒ Claim(s) *1,3-6,9-11,49,175-178,183-185,187,188 and 190-192* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9-12-07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1,3, 49,175-177,183,184,187, and 190 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guy (US005187591A) in view of Bartholomew (US006292479B1) and Shaffer (US006411601B1).

Regarding Claims 1 and 49, Guy discloses a signal processing system (see FIG. 1 (for transmitter) and FIG. 5 (for receiver) of system of processing information; see col. 2, line 54-65), comprising:

a voice exchange (see FIG. 1, Aural module 104 (for transmitter), and FIG. 5 (for receiver)) for exchanging voice signals (see FIG. 1, analog voice signal 100) between a first telephony device (see FIG. 1, source of aural information 102 such as telephone; see col. 2, line 64 to col. 3, line 1; see col. 3, line 15-20; 39-56) and a network (see FIG. 2, a network that connects to multiplexer 46; see col. 6, line 15-19);

a full duplex data exchange (see FIG. 1, a combined system of Modulated data module 104 (for transmitter), see FIG. 5 (for receiver)) for exchanging data signals (see FIG. 1, modem 128) from a second telephony device (see FIG. 1, personal computer 126; see col. 2, line 67 to col. 4, line 16) with demodulated data signals from the local/line network (see FIG. 2, demodulator 24 (at transmitter) is sends to the receiver; see col. 3, line 59 to col. 5, line 15; and

see FIG. 5, demodulated data is received from the transmission network (at receiver); see col. 6, line 19-37), wherein the duplex data exchange demodulates the data signals from the first telephony device (see FIG. 2, transformer 22 and packetizer 36 (at transmitter) transforms and packetizes data signals; see col. 3, line 59 to col. 5, line 15), outputs the demodulated data signals to the packet based network (see FIG. 2, transformed and packetized data signals are sent to a network via line 50; see col. 6, line 15-19), remodulates the demodulated data signals from the network (see FIG. 5, depacketizer 64 and transformer 68; the receiver depacketizes and re-transforms the received signal; see col. 6, line 19-62), and outputs the remodulated data signals to the first telephony device (see FIG. 5, depacketized and transformed signal is sent toward the source of aural information 102; see col. 6, line 19-62; see col. 2, line 64 to col. 3, line 1; see col. 3, line 15-20; 39-56); and

a resource monitor (see FIG. 2, Discriminator 20) that monitors processor resources during a call used by on or both of the voice exchange and the data exchange (see FIG. 1-2, Discriminator 20 monitors/detects processing resources (e.g. variation of frequency, baud rate, bandwidth) used by of aural module and modulator/demodulator module during a call; note that discriminator 20 monitors/detects processor resources by analyzing on-going analog voice signal/pitches or data/facsimile data, thus it is clear that monitoring is performed during a connection/call; see col. 3, line 59 to col. 5, line 46), and that dynamically enables and disable signal processing functionality used by the one or both of the voice exchange and the data exchange in the exchange of one or both of the voice and data signals of the call (see col. 3, line 59 to col. 4, line 10; discriminator 20 dynamically enabling/directing determined voice signal processing functionality used by Aural module (for voice), for the transmission of voice signal of

a connection/call, thereby disabling/not-directing/stopping processing functionality used by a modulator/demodulator module (for data/fax); or discriminator 20 dynamically enabling/directing determined fax signal processing functionality used by a modulator/demodulator module (for data/fax), for the transmission of data/fax signal of a connection/call, thereby disabling/not-directing/stopping processing functionality used by a Aural module (for voice)).

Guy does not explicitly disclose "a packet based network".

However, utilizing a packet based network such as Internet, ATM, or equivalents thereof, as a transmission medium for voice, data, and fax information is so well known in the art. In particular, Bartholomew teaches a signal processing system (see FIG. 3, Gateway 20 a-b) exchanging signals between telephony devices (see FIG. 3, 11 a-c) over a packet based network (see FIG. 3, Internet 50); see col. 9, line 15 to col. 10, line 20). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a packet based network (i.e. Internet) for transmission, as taught by Bartholomew in the system of Guy, so that it would be economical, especially for long distance calls, compared with the toll rates changed by long distance interexchange carriers; see Bartholomew col. 5, line 17-30.

Neither Guy nor Bartholomew explicitly discloses "controlling processor computation load".

However, CPU, DSP, or computer controlling/managing computer processing power/capacity, computer-processing memory, and/or computer processing power consumption/usage are so well known in the computer art. In particular, Shaffer discloses a resource monitor (see FIG. 2, Resources availability monitor 42 of the gateway 10) that monitors

processor resources used by one or both of voice processing (see FIG. 2, resource requirement module 40; see col. 4, line 25-30; voice only processing) and data processing (see FIG. 2, resource requirement module 40; see col. 4, line 25-35; video processing), and that dynamically enables (see FIG. 4, step 74, 84; based on DSP/CPU resource availability dynamically processing the call) and disable signal processing functionally (see FIG.4, 74,76,78,80; based on DSP/CPU resource availability dynamically holding/stopping/disabling the processing of a call) used by one or both of voice processing and the data processing in the exchange of one or both of the voice and data of a call, to control processor computational load (see col. 4, line 1-47; col. 6, line 60 to col. 7, line 50; processing of voice, video, or both used/required by a voice/video/both call to control DSP resources/load).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide processor resources and controlling processor computation load, as taught by Shaffer, in the combined system of Guy and Bartholomew, so that it would provide securing network resources in a manner which is responsive to the availability of multiple network resources; see Shaffer col. 2, line 5-46.

Regarding Claim 3, the combined system of Guy and Bartholomew the packet based network as disclosed above in claim 1. Guy further discloses wherein the data signals from the network line are modulated by a voiceband carrier (see FIG. 2, source of modulated data 14 of fax/modem signals are modulated within voice band carrier; see col. 1, line 65 to col. 2, line 2; see col. 3, line 40-50;), and

the data exchange comprises a data pump (see FIG. 2, demodulator 24 at transmit side and modulator 70 at the receive side) for demodulating the data signals from the network line for

transmission on the network (see col. 4, line 6-67; demodulates fax/modem signals from telephony/data line for transmission towards a network) and remodulating the data signals from the transmission network with the voice/aural/telephony carrier for transmission on the network/local line (see FIG. 5, modulator 70 of receiver re-modulates received data signals with voice/aural/telephony carrier for transmission on the telephony/data line); see col. 6, line 19-62).

Regarding Claim 175, Guy discloses a method for interfacing a plurality of telephony devices (see FIG. 1, Fax 110, Telephone/source of aural information 102, modem 128) with a network (see FIG. 2, a network that connects to multiplexer 46; see col. 6, line 15-19), the network adapted for transmission of packetized signals (see FIG. 1, packetizer 118 and multiplexer 122), the method comprising:

depacketizing an incoming packetized signal from the network, the depacketized signal having an associated type (see FIG. 5, Depacketizer 64; also see FIG. 4, label 42 of the signal/packet which identify the information (i.e. type) contain in the signal/packet as aural/fax/data);

identifying the type of depacketized signal (see FIG. 5, Depacketizer 64) as one of voice signal (see FIG. 1, Telephone/source of aural information 102), fax signal (see FIG. 1, Fax 110), or data signal (see FIG. 1, modem 128); see col. 2, line 60 to col. 3, line 16; see col. 6, line 19-62;

if the type of the depacketized signal is voice signal, performing a voice mode signal processing on the depacketized signal (see FIG. 5, transformer of a aural information 68 and controller 68; see col. 6, line 19-62);

if the type of the depacketized signal is fax signal, performing a fax relay mode signal processing on the depacketized signal (see FIG. 5, Modulator 70 and controller 66; see col. 6, line 19-62);

if the type of the depacketized signal is data signal, performing data modem relay mode signal processing on the depacketized signal (see FIG. Modulator 70 and controller 66; see col. 6, line 19-62); and

transmitting the depacketized processed signal to a corresponding type of telephony device the plurality telephony devices (see FIG. 1 and 5; see col. 6, line 19-62; the recover of original signal is send to corresponding Telephone, fax or modem);

dynamically enabling and disabling signal processing functionality during processing of the depacketized signal (see FIG. 1-2, Discriminator 20 monitors/detects processing of aural module and modulator/demodulator module; see col. 3, line 59 to col. 5, line 46; col. 3, line 59 to col. 4, line 10; discriminator 20 dynamically enabling/directing determined voice signal processing functionality used by Aural module (for voice), for during the transmission of voice signal of a connection/call, thereby disabling/not-directing/stopping processing functionality used by a modulator/demodulator module (for data/fax); or discriminator 20 dynamically enabling/directing determined fax signal processing functionality used by a modulator/demodulator module (for data/fax), for during the transmission of data/fax signal of a connection/call, thereby disabling/not-directing/stopping processing functionality used by a Aural module (for voice)).

Guy does not explicitly disclose "a packet based network".

However, utilizing a packet based network such as Internet, ATM, or equivalents thereof, as a transmission medium for voice, data, and fax information is so well known in the art. In particular, Bartholomew teaches a signal processing system (see FIG. 3, Gateway 20 a-b) exchanging signals between telephony devices (see FIG. 3, 11 a-c) over a packet based network (see FIG. 3, Internet 50); see col. 9, line 15 to col. 10, line 20). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a packet based network (i.e. Internet) for transmission, as taught by Bartholomew in the system of Guy, so that it would be economical, especially for long distance calls, compared with the toll rates changed by long distance interexchange carriers; see Bartholomew col. 5, line 17-30.

Neither Guy nor Bartholomew explicitly discloses "controlling processor computation load".

However, CPU, DSP, or computer controlling/managing computer processing power/capacity, computer-processing memory, and/or computer processing power consumption/usage are so well known in the computer art. In particular, Shaffer discloses a resource monitor (see FIG. 2, Resources availability monitor 42 of the gateway 10) that monitors processor resources used by one or both of voice processing (see FIG. 2, resource requirement module 40; see col. 4, line 25-30; voice only processing) and data processing (see FIG. 2, resource requirement module 40; see col. 4, line 25-35; video processing), and that dynamically enables (see FIG. 4, step 74, 84; based on DSP/CPU resource availability dynamically processing the call) and disable signal processing functionally (see FIG.4, 74,76,78,80; based on DSP/CPU resource availability dynamically holding/stopping/disabling the processing of a call) used by one or both of voice processing and the data processing in the exchange of one or both

of the voice and data of a call, to control processor computational load (see col. 4, line 1-47; col. 6, line 60 to col. 7, line 50; processing of voice, video, or both used/required by a voice/video/both call to control DSP resources/load).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide processor resources and controlling processor computation load, as taught by Shaffer, in the combined system of Guy and Bartholomew, so that it would provide securing network resources in a manner which is responsive to the availability of multiple network resources; see Shaffer col. 2, line 5-46.

Regarding Claim 176, Guy discloses wherein the plurality of telephony devices include one or more of analog and digital telephone (Telephone/source of aural information 102), analog fax machines (see FIG. 1, fax 110), data modem (see FIG. 1, modem 128).

Regarding Claim 177, Bartholomew discloses wherein the packet based network is the Internet (see FIG. 3, Internet 50); see col. 9, line 15 to col. 10, line 20). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a packet based network (i.e. Internet) for transmission, as taught by Bartholomew in the system of Guy, for the same motivation as stated above in claim 175.

Regarding Claim 183, the combined system of Guy and Bartholomew discloses processor resources as set forth above in claim 1 and 49. Shaffer further discloses processor resources comprise one of processing capacity (see col. 7, line 40-50; transcoding DSP/CPU resources).

Regarding Claim 184,187, and 190, the combined system of Guy and Bartholomew discloses wherein dynamically adjusting complexity of signal processing algorithms comprises

selecting from a plurality of levels of functionality of an algorithm (see col. 3, line 59 to col. 4, line 10; discriminator 20 selecting enabling/directing voice/fax signal processing algorithms/methods from a plurality of algorithms/method of voice and fax processing). Shaffer further discloses selecting from a plurality of levels of functionality of an algorithm (see col. 4, line 25-30; selection a method/algorithm of enabling/allowing of DSP processing from a plurality of DSP algorithms of processing (i.e. audio, video, etc.)).

3. Claims 4-6 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guy in view of Bartholomew and Shaffer, applied to claim 1 above, and further in view of Ohlsson (US006452950B1).

Regarding Claims 4 and 9, the combined system of Guy, Bartholomew and Shaffer discloses all limitation as set forth above in claim 1.

Neither Guy, Bartholomew nor Shaffer explicitly disclose "a jitter buffer for receiving packets of varying delay and compensating fort the delay variation of packets".

However, Ohlsson discloses a jitter buffer (see FIG. 2A-B, a combined system of Jitter buffer 10 and CPU/processor) for receiving packets of varying delay from the packet based network (see col. 1, line 65-66; see col. 2, line 29-32; Internet, or packet communication system) and compensating fort the delay variation of packets (see col. 2, line 20-56; see col. 5, line 25 to col. 7, line 66).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a jitter buffer for delay varying and compensation, as taught by Ohlsson, in the combined system of Guy, Bartholomew and Shaffer, so that it would provide

a smooth data feed to an application without excessive delays, and the use of network bandwidth more intelligently; see Ohlsson col. 1, line 63-67; see col. 2, line 20-39.

Regarding Claims 5 and 10, the combined system of Guy, Bartholomew, Shaffer and Ohlsson discloses all limitation as set forth above in claims 1 and 4.

Neither Guy, Bartholomew, nor Shaffer explicitly discloses "a jitter buffer outputs an isochronous stream".

However, Ohlsson discloses a jitter buffer (see FIG. 2A-B, a combined system of Jitter buffer 10 and CPU/processor) outputs an isochronous stream (see col. 2, line 20-56; see col. 5, line 25 to col. 7, line 66; jitter buffer transmits/outputs the sequential/continuous stream of data).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a jitter buffer for delay varying and compensation for sequential/continuous stream of data, as taught by Ohlsson, in the combined system of Guy, Bartholomew and Shaffer, so that it would provide a smooth data feed to an application without excessive delays, and the use of network bandwidth more intelligently; see Ohlsson col. 1, line 63-67; see col. 2, line 20-39.

Regarding Claim 6, Guy discloses wherein the data pump transmits the received data signals to the network line at a transmit rate (see FIG. 5, modulator 70 of receiving side transmits with a transmit rate the received data signals towards the telephony/data line); see col. 6, line 19-62.

Regarding Claim 11, the combined system of Guy, Bartholomew, Shaffer and Ohlsson discloses all limitation as set forth above in claim 1 and 9. Ohlsson discloses a jitter buffer comprises a voice queue which buffer the received voice signals (see FIG. 2A-B, Jitter buffer 10

queues the voice signals) for a holding time and a voice synchronizer (see FIG. 2A, CPU/processor) which adaptively adjusts the holding time of the voice queue (see col. 2, line 20-56; see col. 5, line 25 to col. 7, line 66).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a jitter buffer for queuing and processor for controlling jitter buffer holding time, as taught by Ohlsson, in the combined system of Guy, Bartholomew and Shaffer, so that it would provide a smooth data feed to an application without excessive delays, and the use of network bandwidth more intelligently; see Ohlsson col. 1, line 63-67; see col. 2, line 20-39.

4. Claims 185,188 and 191 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guy in view of Bartholomew and Shaffer, applied to claim 1, 49 and 175 above, and further in view of Sanders (US006704308B2).

Regarding Claims 185, 188 and 191, the combined system of Guy, Bartholomew and Shaffer discloses dynamically adjusting complexity of signals processing algorithms as set forth above in claim 1, 49 or 175.

Neither Guy, Bartholomew, nor Shaffer explicitly disclose "bypassing or disabling an echo canceller".

However, Sanders discloses bypassing or disabling an echo canceller (see col. 8, line 12-20; for digitized voice data that does require echo canceling, echo canceller is bypassed).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to bypass echo canceller, as taught by Sanders, in the combined system

of Guy, Bartholomew and Shaffer, so that it would provide flexible architecture that can be readily adapted to changing customer demands and changes in processing capability; see Sanders col. 1, line 65-67.

5. Claims 178 and 192 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guy in view of Bartholomew, applied to claim 178 above, and further in view of Griffin (US005826222A).

Regarding Claim 178, Guy discloses a method for integrated interfacing a plurality of telephony devices (see FIG. 1, Fax 110, Telephone/source of aural information 102, modem 128 at the transmitting side) to a network (see FIG. 2, a network that connects to multiplexer 46; see col. 6, line 15-19), the network adapted for transmission of packetized signals (see FIG. 1, packetizer 118 and multiplexer 122), the method comprising:

detecting a pitch period of in a voice band signal (see FIG. 2, Discriminator 20 with voice detection functionality; see col. 3, line 60 to col. 4, line 2; detecting voice pitch frequency/period of a signal. Note that frequency=1/period, and thus when detecting a frequency it is also detecting the period.);

comparing detected pitch period to a plurality of thresholds (see col. 3, line 60-69; discriminating the voice signal pitch frequency/period by comparing to voice frequency thresholds/acceptable-level between 300 hertz and 2000 hertz);

packetizing a voice signal (see FIG. 1, Telephone/source of aural information 102), a fax signal (see FIG. 1, Fax 110), or a data signal (see FIG. 1, modem 128; see col. 2, line 60 to col. 3, line 16) in a packetiziation engine (see FIG. 1, packetizer 36) to generate a packetized signal

based on comparing the estimated pitch period to a plurality of threshold (see FIG. 2, a packetized signal transmitted by multiplexer 48 according to compared voice signal pitch frequency/period with acceptable thresholds in order to detect/determine voice or fax signal; see col. 3, line 1 to col. 4, line 55; see col. 5, line 45 to col. 6, line 18); and

transmitting the packetized signal over the network to a far end telephony device (see FIG. 1, Fax 110, Telephone/source of aural information 102, or modem 128 at the remote/receiving side; see col. 2, line 60 to col. 3, line 16; also see FIG. 5 for receiving side; see col. 6, line 19-62).

Guy does not explicitly disclose "a packet based network".

However, utilizing a packet based network such as Internet, ATM, or equivalents thereof, as a transmission medium for voice, data, and fax information is so well known in the art. In particular, Bartholomew teaches a signal processing system (see FIG. 3, Gateway 20 a-b) exchanging signals between telephony devices (see FIG. 3, 11 a-c) over a packet based network (see FIG. 3, Internet 50); see col. 9, line 15 to col. 10, line 20).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a packet based network (i.e. Internet) for transmission, as taught by Bartholomew in the system of Guy, so that it would be economical, especially for long distance calls, compared with the toll rates changed by long distance interexchange carriers; see Bartholomew col. 5, line 17-30.

Neither Guy nor Bartholomew explicitly discloses "using autocorrelation function and at least one power measurement of the voice band signal".

However, Griffin discloses the estimate of pitch period of the voice band signal (see FIG. 2, first parameter estimator 14; also see FIG. 6, a first parameter estimator 14' estimates a pitch frequency/period of the voice signal; see col. 5, line 21-42; see col. 6, line 40-46; see col. 9, line 26-30) using an autocorrelation function (see FIG. 6, 7, autocorrelation 54; see col. 9, line 15 to col. 10, line 4; using autocorrelation domain approach);

comparing the estimated pitch period to a plurality of thresholds (see FIG. 2, voice/unvoiced (V/UV) parameter estimation unit 24; or see FIG. 6, V/UV parameter estimation unit 46 determines preliminary estimated V/UV parameter by comparing threshold/value of zero and one half in order to determine voice or unvoice signal; see col. 7, line 16-25; see col. 8, line 61 to col. 9, line 25),

comparing and at least one power measurement of the voice band signal (see FIG. 6, U/V estimation unit 46 determine preliminary estimated V/UV parameters by comparing output of first parameter estimator 14' estimated at pitch period n_0 to the measured measured/determined total/plurality of voice power/energy of a voice signal; see col. 9, line 20 to col. 10, line 5).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use autocorrelation function and at least one power measurement of the voice band signal, as taught by Griffin, in the combined system of Guy and Bartholomew, so that it would reduce computation; see Griffin col. 10, line 1-4.

Regarding Claim 192, the combined system of Guy and Bartholomew discloses dynamically adjusting complexity of signals processing algorithms, and pitch period/frequency of voice signals as set forth above.

Neither Guy nor Bartholomew explicitly discloses "autocorrelation function and a plurality of power measurements".

However, Griffin discloses the estimate of pitch period of the voice band signal (see FIG. 8, estimate 60; see FIG. 9, estimate 68, or FIG. 10, estimates 76 of pitch period of voice signal; see col. 5, line 21-42) is calculated by applying an autocorrelation function (see FIG. 7, autocorrelation 54; see col. 9, line 65 to col. 10, line 4) and a plurality of power measurement to the voice band signal (see col. 9, line 25-55; measured/determined total/plurality of voice power/energy values/measured).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to autocorrelation function and a plurality of power measurements, as taught by Griffin, in the combined system of Guy and Bartholomew, so that it would reduce computation; see Griffin col. 10, line 1-4.

Allowable Subject Matter

6. **Claims 26, 38-48, 74, 91, 179-182,186, and 189** are allowed.

7. **Claims 7, 8, and 12** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments with respect to claims 1, 3-6,9-11,49,183-185,187,188, 190-192 have been considered but are moot in view of the new ground(s) of rejection.

Regarding claims 1,3-6,9-11,49,183-185,187,188, the applicant argued that, "...examiner has failed to establish a case of *prima facie* obviousness...the combined system of Guy and Bartholomew and Shaffer fails to teach, suggest, or discloses.....a resources monitor that monitors resources **during a call** used by on or both of the voice exchange and the data exchange... dynamically enabling and disabling signal processing functionality used in the exchange of one or both of the voice and the data signals of a call, to control processor computational load..." in page 16-22.

In response to applicant's argument, the examiner respectfully disagrees with the above argument.

Guy discloses a resource monitor (see FIG. 2, Discriminator 20) that monitors processor resources **during a call** used by on or both of the voice exchange and the data exchange (**see FIG. 1-2, Discriminator 20 monitors/detects processing resources (e.g. variation of frequency, baud rate, bandwidth) used by of aural module and modulator/demodulator module during a call; note that discriminator 20 monitors/detects processor resources by analyzing on-going analog voice signal/pitches or data/facsimile data, thus it is clear that monitoring is performed during a connection/call; see col. 3, line 59 to col. 5, line 46**), and that dynamically enables and disable signal processing functionality used by the one or both of the voice exchange and the data exchange in the exchange of one or both of the voice and data signals of the call (see col. 3, line 59 to col. 4, line 10; discriminator 20 dynamically enabling/directing determined voice signal processing functionality used by Aural module (for voice), for the transmission of voice signal of a connection/call, thereby disabling/not-directing/stopping processing functionality used by a modulator/demodulator module (for

data/fax); or discriminator 20 dynamically enabling/directing determined fax signal processing functionality used by a modulator/demodulator module (for data/fax), for the transmission of data/fax signal of a connection/call, thereby disabling/not-directing/stopping processing functionality used by a Aural module (for voice)).

It is also well known and established in the art that CPU, DSP, or computer controlling/managing computer processing power/capacity, computer-processing memory, and/or computer processing power consumption/usage. In particular, Shaffer discloses a resource monitor (see FIG. 2, Resources availability monitor 42 of the gateway 10) that monitors processor resources used by one or both of voice processing (see FIG. 2, resource requirement module 40; see col. 4, line 25-30; voice only processing) and data processing (see FIG. 2, resource requirement module 40; see col. 4, line 25-35; video processing), and that dynamically enables (see FIG. 4, step 74, 84; based on DSP/CPU resource availability dynamically processing the call) and disable signal processing functionally (see FIG.4, 74,76,78,80; based on DSP/CPU resource availability dynamically holding/stopping/disabling the processing of a call) used by one or both of voice processing and the data processing in the exchange of one or both of the voice and data of a call, to control processor computational load (see col. 4, line 1-47; col. 6, line 60 to col. 7, line 50; processing of voice, video, or both used/required by a voice/video/both call to control DSP resources/load).

In view of the above, it is clear that the combined system of Guy, Bartholomew and Shaffer discloses all claimed invention as set forth above in rejection.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on

combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, the rejection is based upon the combined system of Guy, Bartholomew and Shaffer, and thus a combined system as a whole clearly discloses the applicant claimed invention as set forth above.

In response to applicant's argument, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, it is very obvious to provide the well-known teaching of CPU/DSP resources processing as taught by Shaffer, in the combined system of Guy and Bartholomew.

Regarding claims 175-177,191, the applicant argued that, "...the proposed combination of references fails to teach or discloses... dynamically enabling and disabling signal processing functionality during processing of depacketized signal, to control processor computation load..." page 22-25.

In response to applicant's argument, the examiner respectfully disagrees with the above argument.

Guy discloses dynamically enables and disable signal processing functionality during processing of the depacketized signal, used by the one or both of the voice exchange and the data exchange (**see FIG. 1-2, Discriminator 20 monitors/detects processing of aural module and modulator/demodulator module; see col. 3, line 59 to col. 5, line 46; col. 3, line 59 to col. 4, line 10; discriminator 20 dynamically enabling/directing determined voice signal**

processing functionality used by Aural module (for voice), for during the transmission of voice signal of a connection/call, thereby disabling/not-directing/stopping processing functionality used by a modulator/demodulator module (for data/fax); or discriminator 20 dynamically enabling/directing determined fax signal processing functionality used by a modulator/demodulator module (for data/fax), for during the transmission of data/fax signal of a connection/call, thereby disabling/not-directing/stopping processing functionality used by a Aural module (for voice)).

Shaffer discloses dynamically enables (**see FIG. 4, step 74, 84; based on DSP/CPU resource availability dynamically processing the call**) and disable signal processing functionally (**see FIG.4, 74,76,78,80; based on DSP/CPU resource availability dynamically holding/stopping/disabling the processing of a call**) used by one or both of voice processing and the data processing in the exchange of one or both of the voice and data of a call, to control processor computational load (**see col. 4, line 1-47; col. 6, line 60 to col. 7, line 50; processing of voice, video, or both used/required by a voice/video/both call to control DSP resources/load**).

In view of the above, it is clear that the combined system of Guy, Bartholomew and Shaffer discloses all claimed invention as set forth above in rejection.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, the rejection is based

upon the combined system of Guy, Bartholomew and Shaffer, and thus a combined system as a whole clearly discloses the applicant claimed invention as set forth above.

In response to applicant's argument, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Regarding claims 178 and 192, the applicant argued that, "...Guy, Bartholomew and Griffin taken alone of in any combination, fail to teach or suggest, at least, "comparing the estimated pitch period to a plurality of thresholds", or "packetizing a voice signal, a fax signal, or a data signal in a packetization engine to generate a packetized signal, based upon the comparing the estimated pitch period to a plurality of thresholds and at least one power measurement of the voice band signal...office action fails to demonstrate some suggestion or motivation...examiner has failed to establish a case of prima facie obviousness..." in page 26-28.

In response to applicant's argument, the examiner respectfully disagrees with the above argument.

Guy discloses comparing detected pitch period to a plurality of thresholds (see col. 3, line 60-69; discriminating the voice signal pitch frequency/period by comparing to voice frequency thresholds/acceptable-level between 300 hertz and 2000 hertz); packetizing a voice signal (see FIG. 1, Telephone/source of aural information 102), a fax signal (see FIG. 1, Fax 110), or a data signal (see FIG. 1, modem 128; see col. 2, line 60 to col. 3, line 16) in a packetiziation engine

(see FIG. 1, packetizer 36) to generate a packetized signal based on comparing the estimated pitch period to a plurality of threshold (see FIG. 2, a packetized signal transmitted by multiplexer 48 according to compared voice signal pitch frequency/period with acceptable thresholds in order to detect/determine voice or fax signal; see col. 3, line 1 to col. 4, line 55; see col. 5, line 45 to col. 6, line 18).

Griffin discloses the estimate of pitch period of the voice band signal (see FIG. 2, first parameter estimator 14; also see FIG. 6, a first parameter estimator 14' estimates a pitch frequency/period of the voice signal; see col. 5, line 21-42; see col. 6, line 40-46; see col. 9, line 26-30) using an autocorrelation function (see FIG. 6, 7, autocorrelation 54; see col. 9, line 15 to col. 10, line 4; using autocorrelation domain approach); comparing the estimated pitch period to a plurality of thresholds (see FIG. 2, voice/unvoiced (V/UV) parameter estimation unit 24; or see FIG. 6, V/UV parameter estimation unit 46 determines preliminary estimated V/UV parameter by comparing threshold/value of zero and one half in order to determine voice or unvoice signal; see col. 7, line 16-25; see col. 8, line 61 to col. 9, line 25), comparing and at least one power measurement of the voice band signal (see FIG. 6, U/V estimation unit 46 determine preliminary estimated V/UV parameters by comparing output of first parameter estimator 14' estimated at pitch period n_o to the measured measured/determined total/plurality of voice power/energy of a voice signal; see col. 9, line 20 to col. 10, line 5).

In view of the above, it is clear that the combined system of Guy, Bartholomew and Griffin discloses all claimed invention as set forth above in rejection.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or

modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "a packet based network" (i.e. Internet) for transmission, as taught by Bartholomew in the system of Guy, so that it would be economical, especially for long distance calls, compared with the toll rates changed by long distance interexchange carriers; see Bartholomew col. 5, line 17-30. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use autocorrelation function and at least one power measurement of the voice band signal, as taught by Griffin, in the combined system of Guy and Bartholomew, so that it would reduce computation; see Griffin col. 10, line 1-4.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, the rejection is based upon the combined system of Guy, Bartholomew and Griffin, and thus a combined system as a whole clearly discloses the applicant claimed invention as set forth above.

In response to applicant's argument, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have

suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N. Moore whose telephone number is 571-272-3085. The examiner can normally be reached on 9:00 AM- 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 571-272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ian N. Moore
Examiner
Art Unit 2616

1/14/08